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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,475	03/31/2000	Nuri R. Dagdeviren	N. DAGDEVIREN 18	2477
47396	7590	11/09/2006	EXAMINER	
HITT GAINES, PC AGERE SYSTEMS INC. PO BOX 832570 RICHARDSON, TX 75083				TSE, YOUNG TOI
		ART UNIT		PAPER NUMBER
		2611		

DATE MAILED: 11/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/540,475	DAGDEVIREN, NURI R.	
	<b>Examiner</b>	<b>Art Unit</b>	
	YOUNG T. TSE	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 25 August 2006.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-3,5-26,28-39,41-61 and 63-115 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-3,15,16,25,26,39,41,43-48,68,69,77,78 and 90 is/are allowed.
- 6) Claim(s) 8,10,21,23,31-34,51,55,57,65,93,108 and 110-114 is/are rejected.
- 7) Claim(s) See Continuation Sheet is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 17 April 2006 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|  | 6) <input type="checkbox"/> Other: _____                          |

**Continuation of Disposition of Claims:** Claims objected to are 5-7,9,11-14,17-20,22,24,28-30,35-38,42,49,50,52-54,56,58-61,63,64,66,67,70-76,79-89,91-107,109 and 115.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see page 31, line 9 to page 33, line 6, filed August 25, 2006, with respect to rejection have been fully considered and are persuasive. The rejection of claims 1, 3, 15-17, 25-26, 39, 41, 43-53, 63-64, 66-69, 71, 77-81, 83, 87-91, 94-97, 99-102 and 104-105 has been withdrawn.

### ***Drawings***

2. The drawings were received on April 17, 2006. These drawings are acceptable.

### ***Specification***

3. The disclosure is objected to because of the following informalities: at page 9, lines 1 and 2, "indices" should be "indexes". Appropriate correction is required.

### ***Claim Objections***

4. Claims 5-14, 17-24, 28-38, 49-61, 63-67, 70-76, 79-89 and 91-115 are objected to because of the following informalities:

In claim 5, line 4 (both occurrences), "constellation" should be "constellation of levels". Also see claim 6 (line 3), claim 7 (lines 4 and 6), claim 8 (line 2, both occurrences), claim 9 (lines 4 and 6), claim 10 (line 2, both occurrences), claim 13 (lines 3 and 4), claim 14 (line 5), claim 17 (line 3), claim 18 (line 7, both occurrences, line 8,

and line 9, first occurrence), claim 19 (line 2, both occurrences), claim 20 (lines 3 and 5), claim 21 (line 2, both occurrences), claim 22 (lines 3 and 5), claim 23 (line 2, both occurrences), claim 24 (line 5), claim 28 (line 3, second occurrence), claim 30 (lines 2 and 3), claim 31 (lines 3, 5 and 6), claim 32 (line 4), claim 35 (lines 3, 5, and 6), claim 36 (line 4), claim 49 (line 6), claim 52 (lines 6 and 7), claim 53 (lines 2 and 3), claim 54 (lines 4 and 6), claim 55 (lines 2 and 3), claim 56 (lines 4 and 6), claim 57 (lines 2 and 3), claim 60 (lines 4 and 5), claim 61 (line 5), claim 70 (line 4, both occurrences), claim 71 (line 3), claim 72 (lines 4 and 6), claim 73 (lines 4 and 6), claim 76 (lines 3 and 4), claim 82 (line 4, both occurrences), claim 83 (line 3), claim 84 (lines 4 and 6), claim 85 (lines 4 and 6), claim 91 (lines 2 and 3), claim 92 (lines 4 and 6), claim 93 (lines 2 and 3), claim 94 (lines 2 and 3), claim 97 (lines 2 and 3), claim 98 (lines 4 and 6), claim 99 (lines 2 and 3), claim 101 (line 13, both occurrences), claim 102 (lines 2 and 3), claim 103 (lines 4 and 6), claim 104 (lines 2 and 3), claim 106 (lines 10 and 12), claim 107 (lines 2 and 3), claim 108 (lines 2 and 3), claim 109 (lines 4 and 6), claim 110 (lines 2 and 3), claim 113 (lines 3 and 4), claim 114 (line 5) and claim 115 (lines 2 and 3).

In claim 6, line 1, "the levels" should be "the set of levels".

In claim 7, lines 3 and 5, "where basic\_const goes from 1 to k" and "where positive\_const" should be "where the basic\_const goes from -k to k" and "where the positive\_const", respectively. Also see claim 20 (lines 2 and 4), claim 54 (lines 3 and 5), claim 72 (lines 3 and 5), claim 84 (lines 3 and 5) and claim 106 (lines 9-10 and 11).

In claim 8, lines 4 and 5, "const-(2\*k)" should be "const – (2\*k)". Also see claim 55 (lines 4 and 5) and claim 108 (lines 4 and 5).

In claim 9, lines 3 and 5, “where basic\_const goes from -1 to -k” and “where negative\_const” should be “where the basic\_const goes from -k to k” and “where the negative\_const”, respectively. Also see claim 22 (lines 2 and 4), claim 56 (lines 3 and 5), claim 73 (lines 3 and 5), claim 85 (lines 3 and 5), claim 92 (lines 3 and 5), claim 98 (lines 3 and 5), claim 103 (lines 3 and 5) and claim 109 (lines 3 and 5).

In claim 13, line 2, “a mapped constellation signal” should be “the mapped constellation signal”. Also see claim 18 (line 9), claim 34 (line 2), claim 38 (line 2), claim 60 (line 2), claim 76 (line 2) and claim 113 (line 2).

In claim 14, lines 2-3, “the output block includes a summer for adding” should be “the mapped constellation signal is set equal to the sum of” (see page 12, lines 12-13 of the specification). Also see claim 24 (lines 1-2), claim 61 (lines 1-2) and claim 114 (lines 1-2).

In claim 17, line 3, “are” should be “is”. Also see claim 19 (line 2), claim 49 (line 6), claim 53 (line 2), claims 63-67 (line 2), claim 79 (line 2), claim 80 (line 9), claim 89 (line 2), claim 91 (line 2), claim 95 (line 2), claim 97 (line 2), claim 99 (line 3), claim 100 (line 2), claim 102 (line 2), claim 104 (line 3), claim 105 (line 2), claim 107 (line 2) and claim 115 (line 3).

Claim 20, lines 1-2, “further comprising a table” should be “the table”. Also see claim 22 (lines 1-2).

In claim 21, line 2, “index are” should be “is”. Also see claim 23 (line 2).

In claim 21, line 4, “const \_ (2\*k)” should be “const - (2\*k)”.

In claim 23, lines 4 and 5, “const+(2\*k)” should be “const + (2\*k)”.

In claim 28, line 2, the word “further” should be deleted. Also see claim 70 (line 2).

In claim 29, lines 1-2, “further including generating a mapped constellation equal” should be “wherein the generated mapped constellation equals”.

In claim 30, line 2, “the minimum level” should be “a minimum level”.

In claim 31, lines 4 and 6, “the basic constellation level” and “level and” should be “a basic constellation level” and “level of the input signal and”, respectively. Also see claim 35 (lines 4 and 6) and claim 61 (lines 3-4).

In claim 32, line 2, “wherein index” should be “wherein the index”. Also see claim 36 (line 2).

In claim 36, line 4, the word “in” should be deleted.

In claim 54, lines 1 and 4, “further comprising” and “the precoder” should be “the precoder” and “the table”, respectively. Also see claim 56 (lines 1 and 4), claim 92 (lines 1 and 4) and claim 98 (lines 1 and 4).

In claim 55, line 2, the word “index” should be deleted. Also see claim 57 (line 2), claim 93 (line 2), claim 108 (line 2) and claim 110 (line 2).

In claim 56, line 5, “to-m” should be “to –m”. Also see claim 73 (line 5), claim 85 (line 5), claim 92 (line 5), claim 98 (line 5), claim 103 (line 5) and claim 109 (line 5).

In claim 96, line 5, “generate\_the” should be “generate the”.

In claim 103, lines 1 and 4, “further comprising” and “the precoder” should be “the mapper” and “the table”, respectively.

In claim 106, line 11, “precoder” should be “table”.

In claim 109, lines 1-2, "further comprising a table that" should be "wherein the table"; line 2, "a constellation index" should be "the constellation index"; lines 3 and 5, "a plurality of levels" should be "the plurality of levels"; and line 4, "the precoder" should be "the table".

In claim 114, line 3, "with the" should be "with a".

Claims 11-12 are objected to because they are depended upon claim 7.

Claim 42 is objected to because it is depended upon claim 18.

Claim 33 is objected to because it is depended upon claim 32.

Claim 37 is objected to because it is depended upon claim 36.

Claim 50 is objected to because it is depended upon claim 49.

Claims 58-59 are objected to because they are depended upon claim 52.

Claims 74-75 are objected to because they are depended upon claim 72.

Claims 81 and 87-88 are objected to because they are depended upon claim 80.

Claim 86 is objected to because it is depended upon claim 84.

Claim 112 is objected to because it is depended upon claim 109.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 8, 10, 21, 23, 31-34, 51, 55, 57, 65, 93, 108 and 110-114 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly

point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 8 (line 6), claim 10 (line 6), claim 21 (line 6), claim 23 (line 6), claim 31 (line 5), claim 55 (line 6), claim 57 (line 6), claim 65 (lines 2-3), claim 93 (lines 1 and 6), claim 108 (line 6), claim 110 (lines 1 and 6), claim 111 (line 1) and claim 13 (line 1), the phrases "the mapping function", "said j", "the constellation of levels" and "the mapper" all lack antecedent basis.

The claim subject matter of claim 51 lacks connection or cooperation with the independent claim 49.

Claims 32-34 are rejected to because they are depended upon claim 31.

Claims 112 and 114 are rejected to because they are depended upon claim 111.

***Allowable Subject Matter***

7. Claims 1-3, 15-16, 25-26, 39, 41, 43-48, 68-69, 77-78 and 90 are allowed.
8. Claims 5-7, 9, 11-14, 17-20, 22, 24, 28-30, 35-38, 42, 49-50, 52-54, 56, 58-61, 63-64, 66-67, 70-76, 79-89, 91-107, 109 and 115 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.
9. Claims 8, 10, 21, 23, 31-34, 51, 55, 57, 65, 93, 108 and 110-114 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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